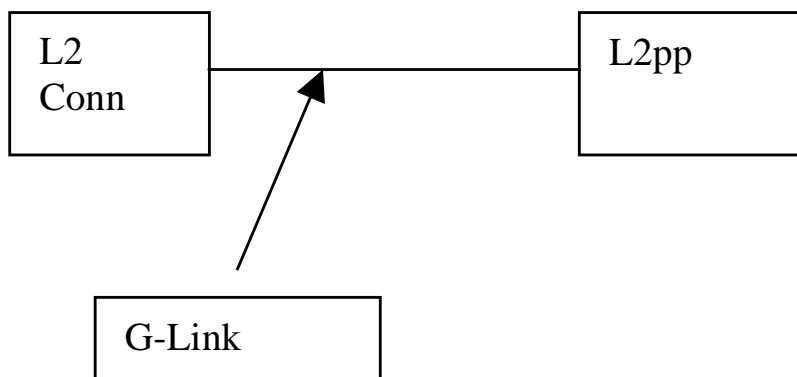


Data From the CFT/CPS Trigger to the L2 Preprocessors



Data - 50 Tracks, 20 bits / track

Most of the time this link sits IDLE during which time it sends null frames .

Some time after a L1 accept is issued the data starts.

| Word | | Data |
|------|--|-----------------------|
| 1 | | Source ID - Cross # |
| 2 | | Turn # |
| 3 | | 1st Track |
| 4 | | 2nd Track |
| - | | - |
| n-1 | | last Track |
| n | | Number of Tracks Sent |

The data words from L2 Concentrator. The data consists of two header words followed by n-3 tracks followed by the number of tracks. The maximum number of tracks is fixed and is NOW believed to be 50.

Immediately after the last track is sent the link returns to sending null frames.

| Format of 1st Data Word from CFT Front End | | | | |
|--------------------------------------------|------------|-------------|-----|-----------------|
| Bit # | | Field Bit # | | Use |
| 19 | Most Sig. | 3 | msb | spare |
| 18 | | 2 | | spare |
| 17 | | 1 | | spare |
| 16 | | 0 | | spare |
| 15 | | 7 | | spare |
| 14 | | 6 | | spare |
| 13 | | 5 | | spare |
| 12 | | 4 | | spare |
| 11 | | 3 | | spare |
| 10 | | 2 | | spare |
| 9 | | 1 | | spare |
| 8 | | 0 | lsb | Status |
| 7 | | 7 | msb | Crossing Number |
| 6 | | 6 | | Crossing Number |
| 5 | | 5 | | Crossing Number |
| 4 | | 4 | | Crossing Number |
| 3 | | 3 | | Crossing Number |
| 2 | | 2 | | Crossing Number |
| 1 | | 1 | | Crossing Number |
| 0 | Least Sig. | 0 | lsb | Crossing Number |

bit format for the 1st word from the L2 Concentrator

| Format of 2nd Data Word from CFT Front End | | | | |
|--------------------------------------------|------------|-------------|-----|-------------|
| Bit # | | Field Bit # | | Use |
| 19 | Most Sig. | 3 | | Spare |
| 18 | | 2 | | Spare |
| 17 | | 1 | | Spare |
| 16 | | 0 | | Spare |
| 15 | | 15 | msb | Turn Number |
| 14 | | 14 | | Turn Number |
| 13 | | 13 | | Turn Number |
| 12 | | 12 | | Turn Number |
| 11 | | 11 | | Turn Number |
| 10 | | 10 | | Turn Number |
| 9 | | 9 | | Turn Number |
| 8 | | 8 | | Turn Number |
| 7 | | 7 | | Turn Number |
| 6 | | 6 | | Turn Number |
| 5 | | 5 | | Turn Number |
| 4 | | 4 | | Turn Number |
| 3 | | 3 | | Turn Number |
| 2 | | 2 | | Turn Number |
| 1 | | 1 | | Turn Number |
| 0 | Least Sig. | 0 | lsb | Turn Number |

bit format for the 2nd word from the L2 Concentrator

| Format of Data Words from CFT Front End | | | | | | |
|-----------------------------------------|------------|-------------|-----|---------------------------------------------|--|-------------|
| Bit # | | Field Bit # | Use | | | |
| 19 | Most Sig. | 0 | | Track Found Flag [1=found] | | |
| 18 | | 3 | | High Threshold Track Match | | |
| 17 | | 2 | | High Threshold Track N / S | | CPS cluster |
| 16 | | 1 | | Low Threshold Track Match | | CPS cluster |
| 15 | | 0 | | Low Threshold Track N / S | | CPS cluster |
| 14 | | 0 | | Sign of the Pt for Track | | |
| 13 | | 3 | msb | Inner (A) Layer Offset from Outer Layer Bin | | |
| 12 | | 2 | | | | |
| 11 | | 1 | | | | |
| 10 | | 0 | lsb | | | |
| 9 | | 9 | msb | Extended Outer (H) Layer Phi Bin | | |
| 8 | | 8 | | | | |
| 7 | | 7 | | | | |
| 6 | | 6 | | | | |
| 5 | | 5 | | Outer (H) Layer Phi Bin | | |
| 4 | | 4 | | | | |
| 3 | | 3 | | | | |
| 2 | | 2 | | | | |
| 1 | | 1 | | | | |
| 0 | Least Sig. | 0 | lsb | | | |

Definition of bits for the 20bit CFT/CPS track word.

Ten bits are used to identify the phi position.

Five bits are used to identify the momentum including its sign.

Four bits are used to identify matches with the CPS.

And one bit is used to tag the word as containing valid track information.

| Format of Last Data Word from CFT Front End | | | | |
|---------------------------------------------|------------|-------------|-----|-----------------------|
| Bit # | | Field Bit # | | Use |
| 19 | Most Sig. | 3 | | Spare |
| 18 | | 2 | | Spare |
| 17 | | 1 | | Spare |
| 16 | | 0 | | Spare |
| 15 | | 7 | msb | Status |
| 14 | | 6 | | Status |
| 13 | | 5 | | Status |
| 12 | | 4 | | Status |
| 11 | | 3 | | Status |
| 10 | | 2 | | Status |
| 9 | | 1 | | Status |
| 8 | | 0 | lsb | Status |
| 7 | | 7 | msb | Number of Tracks Sent |
| 6 | | 6 | | Number of Tracks Sent |
| 5 | | 5 | | Number of Tracks Sent |
| 4 | | 4 | | Number of Tracks Sent |
| 3 | | 3 | | Number of Tracks Sent |
| 2 | | 2 | | Number of Tracks Sent |
| 1 | | 1 | | Number of Tracks Sent |
| 0 | Least Sig. | 0 | lsb | Number of Tracks Sent |

bit format for the final word from the L2 Concentrator

The Crossing and Turn numbers are used to check that the correct event was sent to the L2pp. The L2pp is responsible for checking this and taking appropriate action. NO checking has been done prior to the L2pp.

The G-Link sends parity bits and is self-checking. If the G-Link receiver detects any error the L2pp is responsible for taking appropriate action. (error message to host, resetting link, ...)